HEART MEMO

Special Edition 1996

Cardiovascular Health Promotion Project

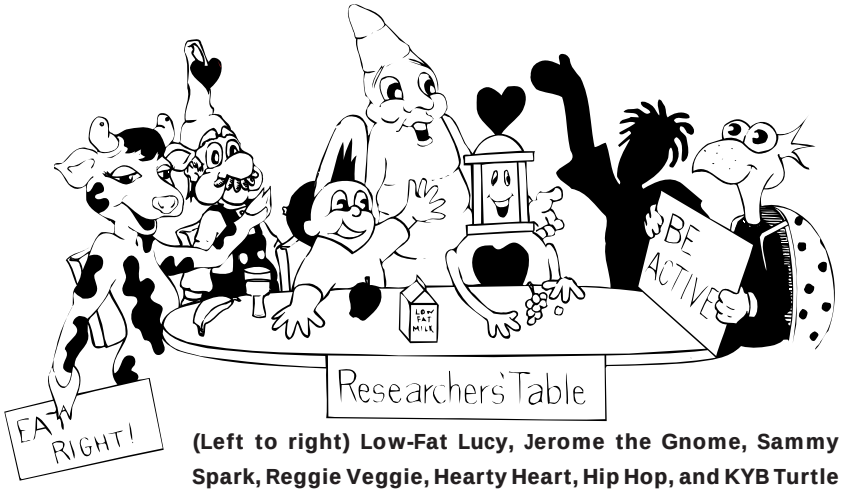
NHLBI LAUNCHES INITIATIVE TO PROMOTE CHILDREN'S HEART HEALTH

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

The National Heart, Lung, and Blood Institute (NHLBI) has launched a major initiative to protect the cardiovascular health of American children.

"This initiative seeks to encourage heart-healthy behaviors, particularly good nutrition and increased physical activity, among children and youth and their families," says NHLBI director Dr. Claude Lenfant. "The initiative cuts across—and so will draw on the resources of—the Institute's cardiovascular education programs. It also was recommended by expert panels of the National Cholesterol Education Program, the National High Blood Pressure Education Program, and the NHLBI Obesity Education Initiative."

Called the Cardiovascular Health Promotion Project (CHPP) and still in the planning stages, the effort is expected to have public, professional, and community outreach components. Part of the outreach effort will be done collaboratively with the National Recreation and Park Association, which has 24,000 members nationwide.



(Left to right) Low-Fat Lucy, Jerome the Gnome, Sammy Spark, Reggie Veggie, Hearty Heart, Hip Hop, and KYB Turtle

Karen Donato, leader of the CHPP effort and coordinator of the Obesity Education Initiative, explains the reason for the new project: "In developing any national education campaign, the NHLBI looks for solid scientific evidence, including basic research and epidemiological, clinical, and prevention demonstration studies, and that's what we have here."

The evidence shows that the atherosclerotic process begins in childhood and that many American children have risk factors for coronary heart disease. The causes include heredity and environmental influences. For example, studies show that children with high blood pressure are likely to come from families with a history of hypertension.

"Fortunately, even young children can learn—and have fun learning—healthy behaviors," says Ms. Donato. "The new initiative will put proven health promotion methods into practice, both in its own activities and by making materials available to other health educators."

As a first step in shaping the new initiative, the Institute brought together NHLBI-supported investigators and other prominent researchers for a workshop on how to use lessons learned from scientific studies to encourage healthy behaviors in children. Also attending the intensive 2-day workshop were many NHLBI staff, including scientists, public health educators, and media experts.

The workshop consisted of two parts: It began with a series of talks about successful health promotion projects, all of which were represented at the workshop; then

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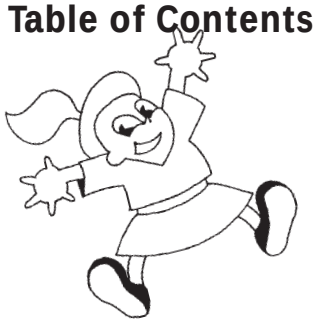

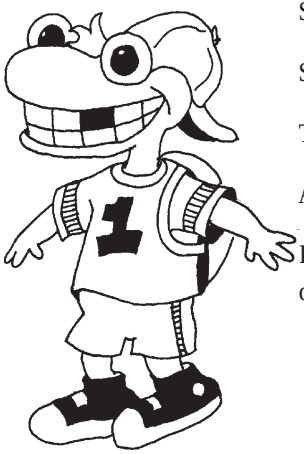

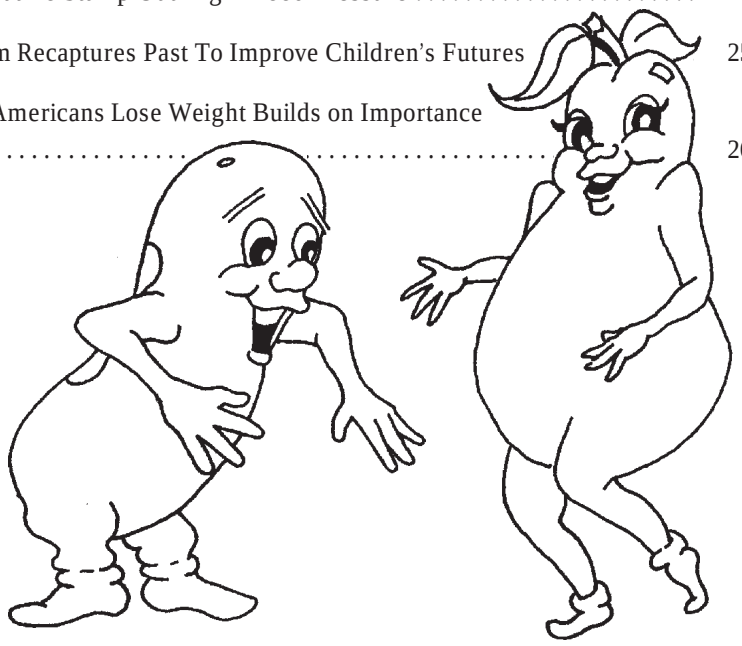

NHLBI LAUNCHES INITIATIVE TO PROMOTE CHILDREN'S HEART HEALTH

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participants discussed 10 questions, designed to draw out strategies and barriers in promoting physical activity and healthy nutrition to children.

All the projects represented at the workshop are spotlighted in this special issue of *HeartMemo.*

The following questions were discussed:

- What age group is most receptive to health promotion efforts?
- How well are messages about nutrition and physical activity received by children?
- What should a national project comprise? What sites, motivators, participants, slogans, and collaborators are needed?
- How should a national project be evaluated?

Participants agreed on some key points:

- Health promotion efforts depend on such factors as children's physical and mental capabilities, including whether they are old enough to make choices. Age also affects whether children are influenced by parents or peers.
- Children can be classed according to five major age groups—pre-elementary school, elementary school, middle school, junior high school, and high school. Each age group needs its own health promotion effort.
- Messages should promote making healthy choices and include problem-solving skills.
- Local, State, and community groups should be involved in health promotion efforts.

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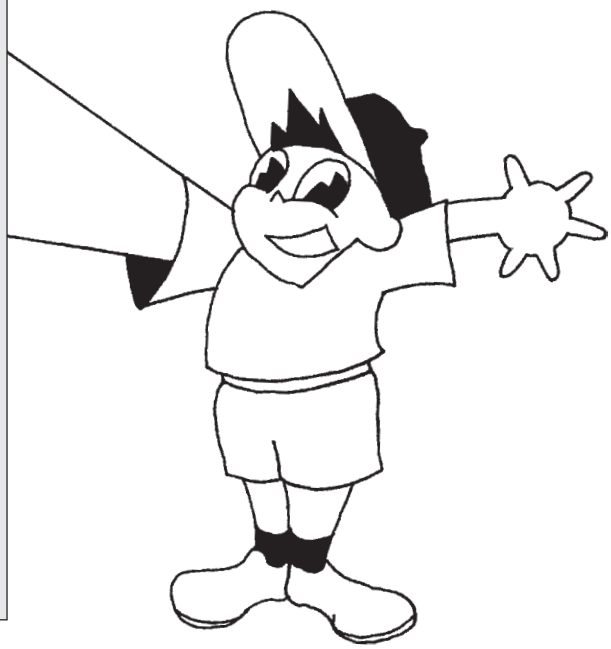
REPORT CARD: HOW GOOD IS THE CARDIOVASCULAR HEALTH OF AMERICA'S CHILDREN?

Health Factor	*Status*
High blood pressure	• About 1 percent of children and adolescents have high blood pressure. • Average blood pressures tend to rise with age—slowly before adolescence and faster after puberty. • High blood pressure tends to remain in adulthood, even for children with high-normal pressure.
High blood cholesterol	• Average blood cholesterol levels in American children and adolescents are too high. • Children and adolescents with elevated blood cholesterol levels are more likely to have elevated levels as adults.
Smoking	• About 34.8 percent of students in grades 9 to 12 smoke. • Children typically start smoking in grades 5 and 6.
Overweight	• Eleven percent (or 4.7 million) of those age 6 to 17 are overweight—more than double the percentage of a decade ago. • Up to 20 percent of overweight children remain so throughout life.
Physical inactivity	• Most children accumulate at least 1 hour of activity daily, but a sizable percentage do not get frequent, vigorous, continuous activity. • Of high school students, only about half of boys and a quarter of girls do a vigorous physical activity three or more times a week. • Activity levels of girls are below those of boys and tend to decline with age.



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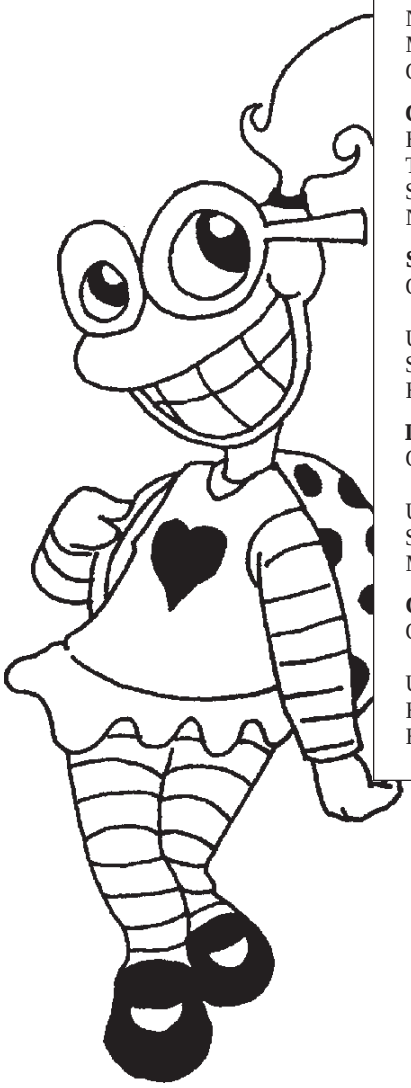

RESEARCHERS AT THE CARDIOVASCULAR HEALTH PROMOTION PROJECT WORKSHOP

Yvonne L. Bronner, Sc.D., R.D.
New Start Family Project
The Johns Hopkins University
School of Hygiene and Public Health
Baltimore, MD

Sally M. Davis, Ph.D.
PATHWAYS
University of New Mexico
School of Medicine
Albuquerque, NM

Craig K. Ewart, Ph.D.
Project Heart
The Johns Hopkins University
School of Hygiene and Public Health
Baltimore, MD

Marian L. Fitzgibbon, Ph.D.
Hip Hop to Health
Northwestern University
Medical School
Chicago, IL

Carolyn Johnson, Ph.D.
Heart Smart/Bogalusa Heart Health Program
Tulane University
School of Public Health and Tropical Medicine
New Orleans, LA

Steven H. Kelder, Ph.D., M.P.H.
Child and Adolescent Trial for Cardiovascular Health
University of Texas—Houston
School of Public Health
Houston, TX

Leslie Lytle, Ph.D., R.D.
Child and Adolescent Trial for Cardiovascular Health
University of Minnesota
School of Public Health
Minneapolis, MN

Guy S. Parcel, Ph.D.
Child and Adolescent Trial for Cardiovascular Health
University of Texas
Health Sciences Center
Houston, TX

Thomas Robinson, M.D., M.P.H.
Computer-Assisted CVD Risk Reduction
Stanford University
School of Medicine
Palo Alto, CA

Joan Rupp, M.S., R.D.
California Project LEAN
University of California, San Diego
La Jolla, CA

James F. Sallis, Jr., Ph.D.
Project SPARK
San Diego State University
San Diego, CA

Barbara M. Shannon, Ph.D.
Evaluation of Cholesterol Education for At-Risk Children
Pennsylvania State University
University Park, PA

Pat Snyder, M.A., R.D.
Working With the School Food Service
University of Minnesota
Minneapolis, MN

Andrew Tershakovec, M.D.
Practitioner-Initiated and Home-Based Cholesterol Education Program
University of Pennsylvania
School of Medicine
Philadelphia, PA

Linda Van Horn, Ph.D., R.D.
Dietary Intervention Study in Children
Northwestern University
Medical School
Chicago, IL

Howell Wechsler, Ed.D., M.P.H.
Low-Fat Lucy
Columbia University
Teachers College
New York, NY

Christine L. Williams, M.D., M.P.H.
Know Your Body
American Health Foundation
Valhalla, NY

- Schools want to improve their physical education classes, and school lunches can be used as "nutrition laboratories," teaching children key lessons.
- Messages on physical activity and nutrition can be effectively linked through rewards and games.
- Cultural identity can motivate some activities, such as dance.

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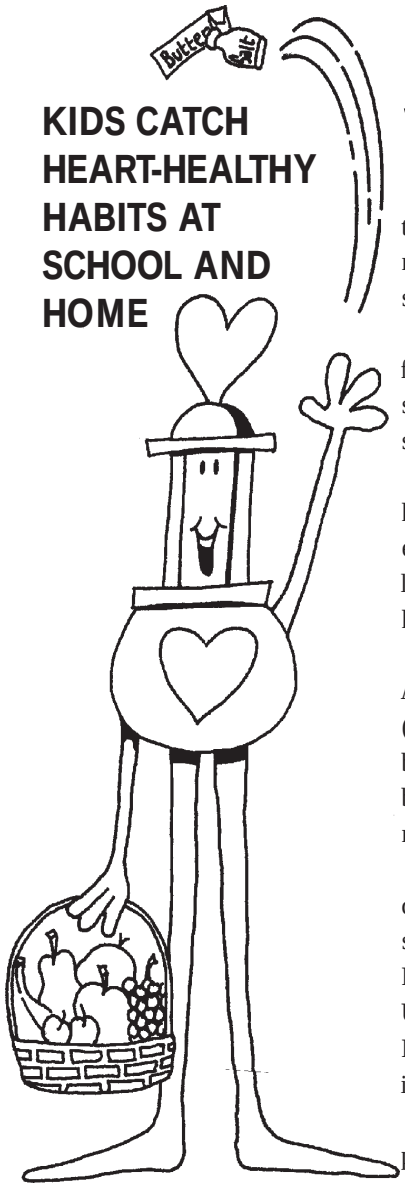

KIDS CATCH HEART-HEALTHY HABITS AT SCHOOL AND HOME

Variety may not be the spice of life where children's eating habits are concerned. Most children tend to eat the same kinds of foods over and over, and many of the foods they like are loaded with salt and fat.

Compounding the problem is the fact that food choices available to children, especially in schools, can be limited or higher in total fat, saturated fat, and sodium than is desirable.

An NHLBI-funded collaborative trial, however, found that children can learn to eat and live heart healthy when they live and learn in an environment that encourages a healthy lifestyle.

This field trial, called the Child and Adolescent Trial for Cardiovascular Health (CATCH), examined how school- and home-based interventions can change children's behavior and promote a lifestyle that will reduce their risk of heart disease.

"The CATCH program targeted both the children themselves and their environment," says Dr. Guy S. Parcel of the Center for Health Promotion Research and Development at the University of Texas Health Sciences Center in Houston. Dr. Parcel is a CATCH principal investigator for one of the four study sites.

According to Dr. Parcel, the CATCH program is the largest school-based health promotion trial ever conducted. It involved 96 elementary schools in four States—Texas, California, Louisiana, and Minnesota. The main trial phase lasted from 1991 to 1994. The schools represented an ethnically and socio-economically diverse student population and were randomly assigned to an intervention group (56 schools) or a control group (40 schools).

In the intervention schools, the CATCH program started in the third grade and continued through the fifth grade. Two key goals were to reduce the total fat and saturated fat content of school lunches and to increase the amount of moderate to vigorous activity in physical education classes. The CATCH program also sought to lower students' cholesterol levels.

The CATCH school-based intervention involved four main components: food service, physical education, classroom curricula, and family involvement.

Taught by classroom teachers, the CATCH curricula included eating and exercise programs that used goal setting, role models, and enjoyable activities to teach the children new skills and values. For example, the third-grade program, Hearty Heart and Friends, featured stories on filmstrips and videocassettes starring characters from the planet Strong Heart. Their adventures emphasized the value of good health.

Go for Health 4 and 5, the fourth- and fifth-grade curricula, used enjoyable activities like preparing healthful snacks and teaching the children to rate foods and activities as "go," "slow," or "whoa."

FACTS for 5, a tobacco avoidance program for fifth graders, emphasized the negative aspects of smoking and chewing tobacco. The kids participated in discussion groups, role-play exercises, and other activities that helped them develop skills to resist pressure to use tobacco products. Smart Choices, a related program for school administrators, teachers, and staff members, provided guidelines for establishing tobacco-free policies in all the CATCH intervention schools.

CATCH Physical Education (PE) encouraged the children to be more active by promoting physical activities such as aerobic games and dances and by training PE specialists and teachers to use methods that involved more students in physical activities. CATCH PE appealed to the children by encouraging a variety of fun activities and skills development and by emphasizing the relationship of physical activity to good health and to feeling good.

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KIDS CATCH HEART-HEALTHY HABITS AT SCHOOL AND HOME

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Eat Smart, the CATCH school nutrition program, helped school cafeterias prepare healthier meals and showed that foods with reduced fat, saturated fat, and sodium can still taste good. Participating schools were given guidelines to help them plan menus, purchase foods, modify recipes, and promote good nutrition.

The project developed a number of tools to help school cafeteria personnel. These included a list of foods prepared by vendors that met Eat Smart criteria, a file containing large-quantity recipes developed by the program and tested in other schools, and posters, table tent cards, bulletin boards, and other display materials to promote good nutrition among students and staff.

Home Team Programs, the family-based intervention, included Family Fun Night activities that took place at school in the evening. These activities varied according to the age of the children but generally included aerobic dance presentations, games and contests that awarded prizes for knowledge of heart health, and food booths that featured heart-healthy snacks. At-home activities were introduced in a weekly packet that outlined family activities and provided a scorecard to record them. Only half of the intervention schools participated in the Home Team Programs, so the benefit of adding this component to the school-based programs could be assessed.

Results show that the CATCH interventions were effective in reducing the children's intake of total fat and saturated fat.

"It was much harder to reduce sodium," explains Dr. Parcel. "Many schools rely heavily on vendor-prepared foods that come with a lot of salt. In addition, some vendor products that are low in fat increase the amount of sodium in the product to improve the flavor. Schools that prepare most of their food onsite were far more successful in reducing the salt content of the meals."

The CATCH program also significantly increased the intensity of students' physical activity in PE classes. And intervention students reported significantly more daily vigorous activity than did those in the control schools.

Blood cholesterol levels did not differ significantly between students in the intervention and control schools. Researchers believe that this may be partly due to the children's developmental changes obscuring the effects of the CATCH intervention.

The CATCH intervention showed no deleterious effects on the children's growth or development.

When asked what he has learned from the CATCH study, Dr. Parcel says, "We found that we could change school meals to reduce the amount of fat they contain and still serve food that children like to eat. What works best is to focus on foods that children already enjoy and learn to modify those foods.

"We also learned that we can increase physical activity by changing what is done in existing physical education classes without introducing huge new programs into the schools. It is possible to make school-level organizational changes in food service, physical education programs, and smoking policies to provide a supportive environment for students to practice healthy behaviors," he notes.

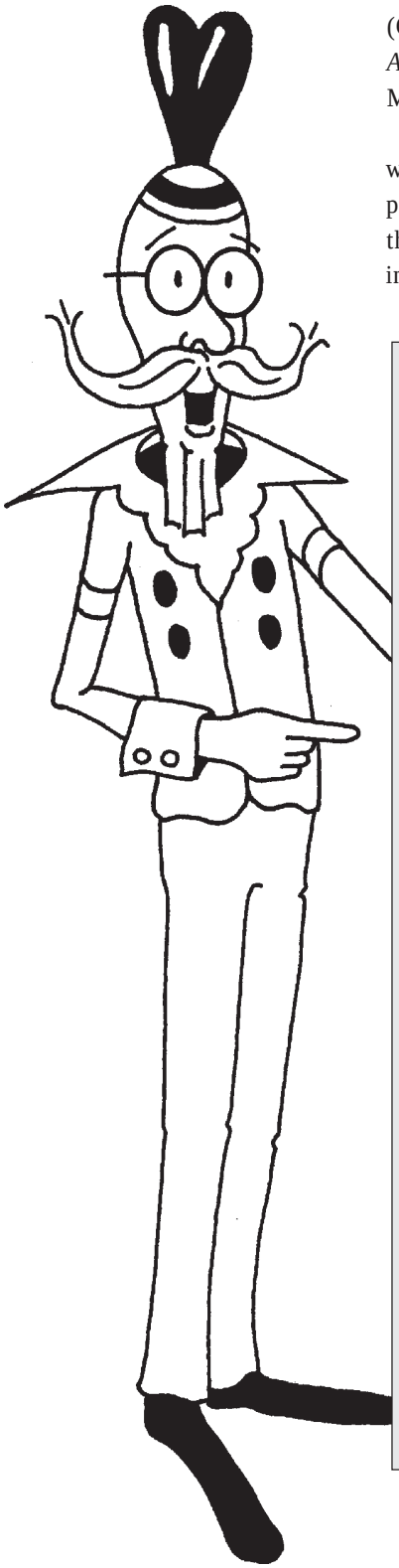
But Dr. Parcel cautions that school-based health education alone is not enough. "It isn't that simple. Creating an environment in schools and at home is vital to the success of behavior modification strategies."

Results of the CATCH study appeared in the following journal article: Luepker RV, Perry CL, McKinlay SM, et al. Outcomes of a field trial to improve children's dietary patterns and physical activity: The Child and Adolescent Trial for Cardiovascular Health (CATCH). *Journal of the American Medical Association*, volume 275, no. 10, pages 768-776, March 13, 1996.

The CATCH III study, a followup trial, will track the children's behavioral, psychosocial, and physiological measures through the eighth grade. Measures will include height, weight, body mass index, cholesterol level, blood pressure, and 24-hour food recall and 57 self-reported behaviors and psychosocial variables. This phase of the study will be completed in 1997.

For more information, contact Dr. Guy S. Parcel, Professor and Director, Center for Health Promotion Research and Development, University of Texas Health Sciences Center, P.O. Box 20186, Houston, TX 77225; telephone 713-792-8547; fax 713-794-1756.

Materials developed by the CATCH program are available at cost from the NHLBI Information Center, P.O. Box 30105, Bethesda, MD 20824-0105. Write to request an order form.



COOPERATION IS THE KEY INGREDIENT FOR HEALTHY SCHOOL LUNCHES

According to Pat Snyder, nutrition coordinator in the University of Minnesota School of Public Health, cooperation between dietitians and nutritionists and school food service personnel is a key ingredient that can help make school lunches low in total fat and saturated fat, nutritious, and tasty enough to appeal to the students.

"School food service staff members are working on and want to offer lunches that are low in fat and tasty," says Ms. Snyder. To work in cooperation with school food service, nutritionists need to learn the details and system of the school food service operations. Then, together, they can work on selecting, preparing, and serving healthier school meals that are lower in fat.

For example, Ms. Snyder worked with a school that served ground meat at least once a week. Instead of advising the school to ban ground meat, she helped the food service staff to lower the meat's fat content. Together, they developed a preparation method for draining and rinsing the meat in hot water. This reduced the fat content by more than half. To enhance the flavor, the cooks added more spices with the sauces.

Ms. Snyder has worked with the food service portions of such programs as LunchPower, CATCH, and Pathways—the latter two spotlighted in this issue. She suggests these tips on how food service personnel can make school lunches lower in fat and healthier:

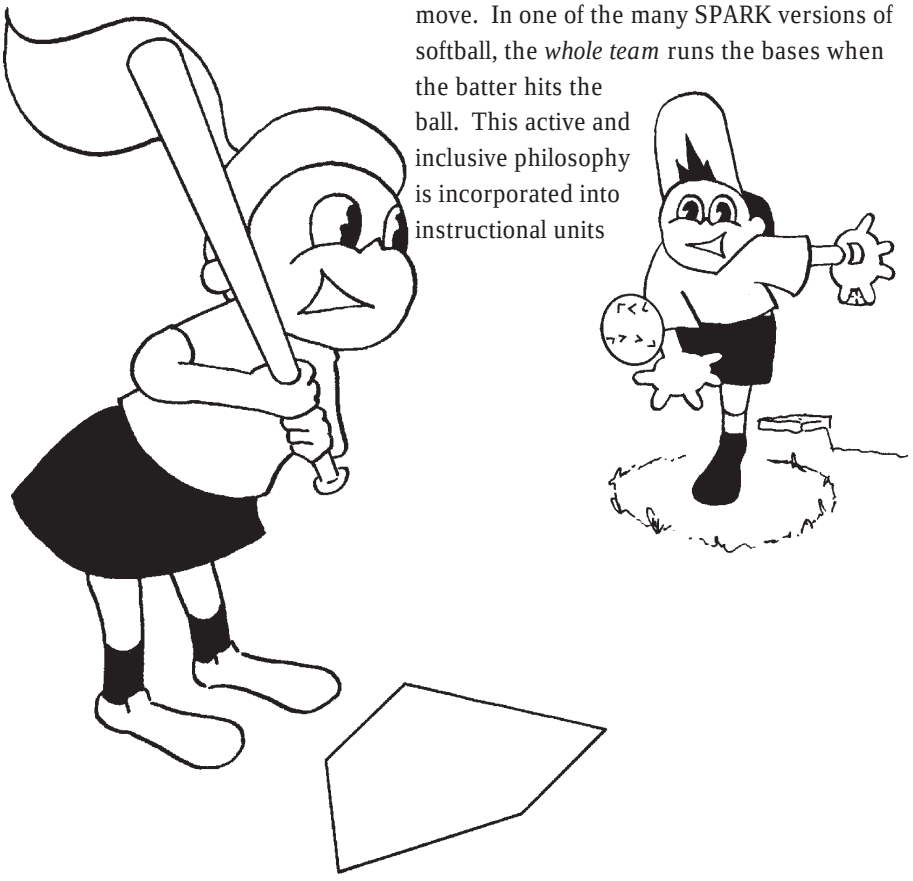
- ❤ Drain cooked ground meat, and rinse with hot water.
- ❤ Offer lower fat milk (skim, 1 percent, or 2 percent).
- ❤ Purchase lower fat prepared products such as:
  - main-dish lower fat versions of pizza, chicken nuggets, chicken patties, and hot dogs;
  - part-skim mozzarella cheese and other low-fat cheeses;
  - low-fat sour cream;
  - low-fat or nonfat salad dressings; and
  - ice milk, low-fat frozen yogurt, and other low-fat desserts.
- ❤ Use less or no butter and other fats to:
  - bake and serve breads;
  - prepare sandwiches;
  - prepare rice, noodles, and pasta dishes;
  - bake chicken and turkey;
  - prepare gravy; and
  - prepare and serve vegetables.
- ❤ Remove butter from the serving line.
- ❤ Offer choices of fruits and vegetables in the serving line.

SPARK IGNITES ELEMENTARY SCHOOL PHYSICAL EDUCATION

Do you remember "phys ed" as the class where you spent half your time standing in line, 2 minutes dodging a very hard ball pitched by a future major leaguer, and the rest of the period sitting on the sidelines nursing a welt or a bruised ego?

For some fortunate children at 150 elementary schools in eight States, memories like these have been exorcised by a new style of physical education. These students, in kindergarten through sixth grade, are participating in SPARK, which stands for Sports, Play, and Active Recreation for Kids. SPARK is a health-related physical education program for elementary schools, developed and proven effective by an NHLBI-funded research study.

SPARK Physical Education is inclusive, noncompetitive, non-gender-specific, active, and fun for both students and teachers. Elite athletes do *not* dominate play. Balls are *not* thrown at students. Students are *not* eliminated or required to wait in line. For example, investigators rewrote the rules of softball to keep all team members on the move. In one of the many SPARK versions of softball, the *whole team* runs the bases when the batter hits the ball. This active and inclusive philosophy is incorporated into instructional units that are easily implemented by physical education specialists as well as classroom teachers.



"One of the primary goals of the physical education classes was to get kids moving," says study investigator Dr. James F. Sallis, Jr., professor of psychology at San Diego State University. "Also, we wanted to turn on kids to physical activity and teach them skills that would make them more confident."

The fun and games aspect of the program masks its serious design. To conduct the SPARK research study, which took place in two school districts in the San Diego area, investigators worked from 1989 through 1994 with more than 2,000 students, teachers, and administrators. The study examined the effects of a combination of health-related curricula and teacher in-service programs on the fitness and out-of-school activity of participating elementary schoolers.

While both SPARK PE programs—primary (K-2) and upper elementary (3-6)—promote physical activity during the school day, the SPARK Self-Management Program teaches children how to be active outside of school. SPARK self-management involves systematic training in behavioral skills and encourages family participation to foster out-of-school physical activity. In addition, children learn how to set goals, make healthy food choices, reduce the time they spend watching television and playing video games, and much more. The ultimate goal is to have children follow a healthy lifestyle—now and in the future.

Promoting activity outside of the classroom, however, has proved difficult. "We really have no evidence that the self-management intervention had any effect on increasing activity outside of school," Dr. Sallis says. "For this age of children, it's possible that it's not appropriate for us to expect them to have control over their own schedules."

On the other hand, the physical education curriculum at the schools produced

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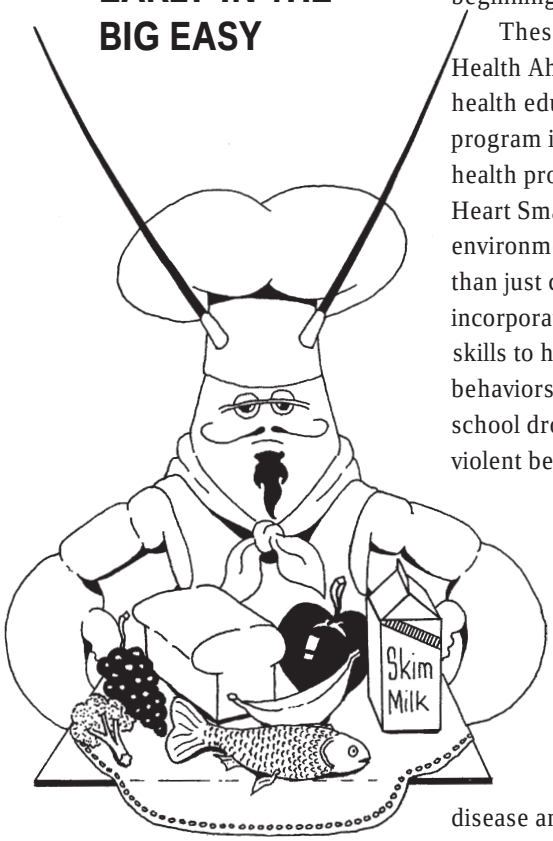
HEART-HEALTHY LEARNING STARTS EARLY IN THE BIG EASY



Children in elementary school can learn to spurn junk food and can be motivated to adopt healthy lifestyles, beginning in kindergarten.

These are among the findings from Health Ahead/Heart Smart, an NHLBI-funded health education research and demonstration program in New Orleans. A comprehensive health promotion program, Health Ahead/Heart Smart addresses the entire school environment. It also has a broader scope than just cardiovascular health: the program incorporates self-efficacy and responsibility skills to help students prevent negative behaviors such as drug and alcohol abuse, school dropout, teenage pregnancy, and violent behavior.

"We help to change young children's behaviors," says Dr. Carolyn Johnson of Tulane University in New Orleans, who helped develop the program. "The results demonstrate that early intervention can halt destructive diet and lifestyle habits that lead to heart disease and other life-threatening illnesses."

Health Ahead/Heart Smart was launched after the Bogalusa Heart Study (another NHLBI-funded project in Louisiana) found that early signs of atherosclerosis, hypertension, and even coronary artery disease were showing up in children as young as 5 years old.

Health Ahead/Heart Smart has both in-school and after-school components. The in-school component provides education sessions over the school year for children in kindergarten through grade 6. Beginning in kindergarten, participating students are taught to be responsible for their health, adopting the program's message to "Eat sensibly, be active, and feel good about yourself!" For example, children in the school program learn to choose healthier lunch selections in the school cafeteria, such as foods with lower amounts of fat and salt, than are found on the typical school lunch tray.

Program director Dr. Gerald S. Berenson of Tulane University says that one of the keys to the success of Health Ahead/Heart Smart has been having all school personnel—teachers, cafeteria managers, physical education specialists, and administrators—get involved. "For instance, if the kids are to learn about good nutrition, they have to be able to find healthy foods in the cafeteria." Parents, too, adds Dr. Berenson, are involved in the program through a newsletter, volunteer activities, health fairs, and Heart Smart Week.

The program's in-school curriculum covers five main areas: general health and physiology, nutrition, physical fitness or exercise, coping and decisionmaking skills, and the "It's Me" module that encourages students to take charge of their own cognitive and physical health.

The physical fitness component introduces noncompetitive aerobic games and activities that supplement team sports, which are so heavily emphasized in most schools. The exercise component, Superkids/Superfit, stresses exercise as fun and rewarding for its own sake.

The training portions use hands-on activities to increase students' interest and participation in the program. Children as well as teachers are urged to pledge that they will make gradual but specific changes in their behavior. Schools are advised to provide feedback to parents about how well children do.

Encouraging students to take charge of their own health also involves helping them overcome social pressures to engage in harmful behaviors, such as using drugs. Dr. Berenson says that the Bogalusa Heart Study shows, for example, that social pressure to smoke and to drink alcohol is a problem as early as third grade.

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HEART-HEALTHY LEARNING STARTS EARLY IN THE BIG EASY

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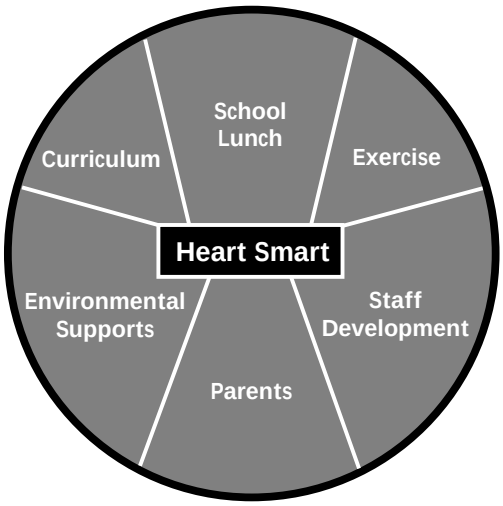
"We have to address social problems, such as alcohol and drug use, violent behavior, and school dropout," he continues. "If we don't, we're not going to be able to teach children good nutrition."

The self-esteem component, adds Dr. Johnson, "addresses very pertinently the idea of taking responsibility for one's health, being assertive—using psychosocial concepts."

The after-school program, currently in only some schools due to funding restraints, involves teachers and parents. The program keeps parents abreast of what their children were learning in school and teaches them how to make heart-healthy meals. Participants in the after-school program reduced their blood pressure, increased their physical activity, stopped smoking, and significantly expanded their understanding of cardiovascular health. The after-school program also includes community activities, such as health fairs and essay and poster contests. Health Ahead/Heart Smart program coordinator Barbara Katzman believes that the after-school program can make a real difference in the health of the entire community.



Health Ahead/Heart Smart is now in 30 elementary schools in New Orleans and elsewhere in Louisiana. The program has proved so effective in getting kids started toward a heart-healthy life that plans are under way to expand the program to even more schools in New Orleans through the use of telecommunications.

Health Ahead/Heart Smart materials are available for only the cost of printing. For more information, contact Dr. Gerald S. Berenson, Director, Center for Cardiovascular Health, School of Public Health and Tropical Medicine, Tulane University Medical Center, 1501 Canal Street, 14th Floor, New Orleans, LA 70112-2824; telephone 504-585-7197; fax 504-585-7194.

AN IMPORTANT MESSAGE FROM THE CHILDREN OF BOGALUSA

Findings from the landmark Bogalusa Heart Study continue to underscore the importance of reaching children at an early ages with heart-healthy messages.

Since 1972, more than 14,000 black and white children ages 5 to 17 in Bogalusa, Louisiana, have participated in this NHLBI-funded epidemiologic study. Results of the longitudinal study confirm that the physiological and behavioral risk factors for heart disease and stroke begin in childhood.

Study findings include the following:

- White males experience a dramatic rise in their ratio of low-density lipoprotein (LDL) to high-density lipoprotein (HDL) cholesterol during adolescence, placing them at increased risk for an early heart attack.
- Hormonal and renal factors among black children combine to increase their susceptibility to high blood pressure, one of the major risk factors for heart disease and the chief risk factor for stroke.
- Among all children, cardiovascular risk factors such as high blood pressure and obesity are interrelated, just as they are in adults.
- More than half of all children eat too much salt, fat, cholesterol, and sugar.
- Families with a history of early heart disease have children with an increased risk of heart disease.

Armed with findings from the Bogalusa Heart Study and others like it, researchers have been able to design effective school-based health promotion programs, such as Health Ahead/Heart Smart.

With help from the children of Bogalusa, youngsters everywhere are learning early how to reduce their risk of heart disease.

CELEBRITY COW SELLS ELEMENTARY SCHOOLERS ON LOW-FAT MILK

When a recent study revealed that children in a school district in New York City were eating too much saturated fat, the Washington Heights-Inwood Healthy Heart Program (HHP) took the results to heart.

The Manhattan-based program had good reason for concern. Diets high in total fat and saturated fat contribute to atherosclerosis, which can begin in childhood. Such diets, when also high in calories, can contribute to pediatric obesity as well.

The recent study showed that whole milk was by far the biggest source of saturated fat in the children's diet. HHP investigators calculated that one dietary change—a switch from whole milk to low-fat milk—would bring children's average saturated fat consumption down to that recommended by the National Cholesterol Education Program. That recommendation is for children over age 2 to get less than 10 percent of their calories from saturated fat.

The HHP then launched the Low-Fat Milk Education Project, funded by its parent New York Healthy Heart Program in the State's department of health. The HHP was managed by the Teachers College of Columbia University, the Columbia-Presbyterian Medical Center, and the Columbia University School of Public Health.

The project targeted six elementary schools in Community School District 6 in northern Manhattan—a low-income, inner-city neighborhood that is mostly Latino.

The problem was how to sell the children on making the switch from whole milk to low-fat milk, usually thought of as being low in taste, too. The solution took some brainstorming but resulted in a multipronged campaign featuring Low-Fat Lucy the Cow.

Lucy became the project's celebrity "spokes-cow." Played by a volunteer dressed in a black and white Holstein costume, Lucy put in three live appearances at each of the three intervention schools. Her image graced many of the project's accompanying educational materials as well. The essence of Lucy's message was: "Choose low-fat milk in the school cafeteria, and urge your parents to buy low-fat milk and use it at home."

The project kicked off with educational assemblies on low-fat foods for each grade at each school. For 2 weeks preceding the assemblies, Lucy was promoted as a "mystery guest" via posters and announcements. On the day of her debut, students in the assemblies were primed for her appearance with a participatory game of Fat-BUSTERS, in which they were challenged to identify low-fat and high-fat foods from slides.

Then Lucy entered the school auditorium to the lively accompaniment of dance music. She carried two cartons of low-fat milk, which she displayed to the children as she danced down the aisle. At each assembly, Lucy explained the importance of a low-fat diet and how changing to low-fat milk can help students keep their diets low in fat. Most of all, she told them that low-fat milk tastes great.

In the auditorium after Lucy's presentation, the students had a taste test. They were given low-fat milk, a low-fat cookie, and a pencil with Lucy's picture and the message "Drink Low-Fat Milk" in English and Spanish. The tastings helped surmount a large obstacle in getting children to switch milk types: Most children do not like to try unfamiliar foods.

At the end of the auditorium sessions, students received easy-to-read flyers available in English and Spanish to take home to their parents. To further encourage parental support for the project, a presentation about low-fat milk was made at a parent association meeting around the time of the student assemblies.

Throughout the project, the low-fat milk message was reinforced by displays in the cafeteria, handouts, refrigerator magnets, and a simple puzzle related to the message. Low-Fat Lucy returned to the schools approximately a week after her first visit for a

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CELEBRITY COW SELLS ELEMENTARY SCHOOLERS ON LOW-FAT MILK

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ceremony to select winners from students who had solved the puzzle. Around the same time, a second tasting took place, this one at school dismissal time, for both students and parents.

Did Lucy succeed? The project prompted significant changes in the children's milk selection habits. Project staff members measured student milk selection in the cafeteria when students were offered a choice between whole white milk and 1-percent low-fat white milk on 5 days in each of three phases: preintervention, postintervention, and 3-month followup.

Before the project, 25 percent of the students who took milk in the three intervention schools were taking 1-percent low-fat white milk. After the intervention, that number more than doubled to 57 percent and among first and second graders approached 70 percent. The types of milk selected by students in the three control schools did not change. Differences between intervention and control schools remained statistically significant when measured more than 3 months after the intervention.

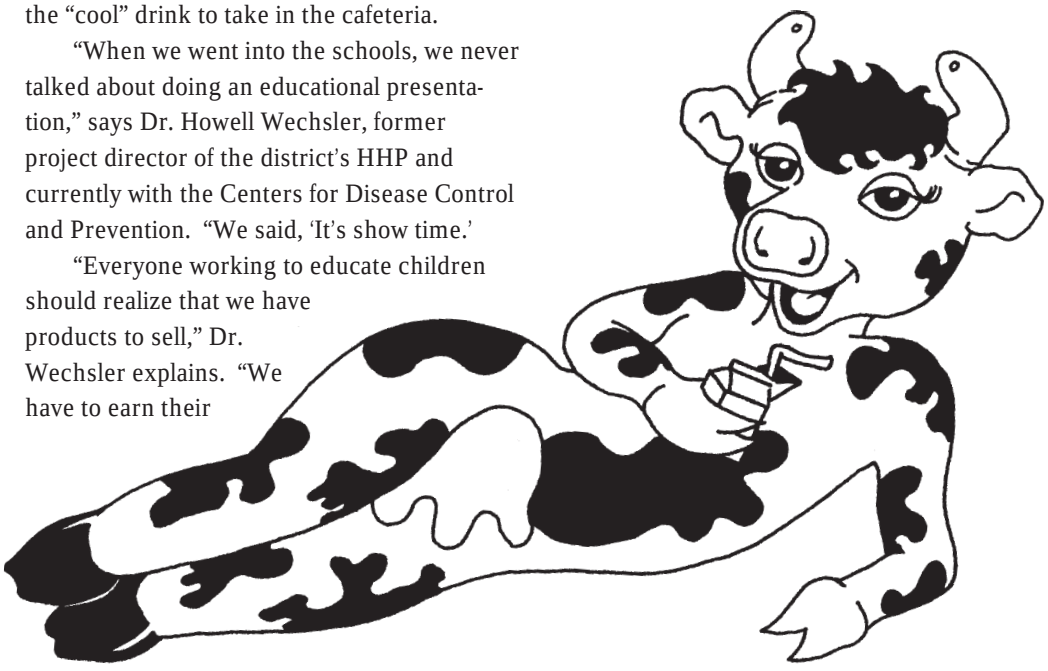
Coordinators credit the project's success primarily to the new image Low-Fat Lucy gave low-fat milk. It was presented not just as the healthy alternative but as the fun choice, the "cool" drink to take in the cafeteria.

"When we went into the schools, we never talked about doing an educational presentation," says Dr. Howell Wechsler, former project director of the district's HHP and currently with the Centers for Disease Control and Prevention. "We said, 'It's show time.'

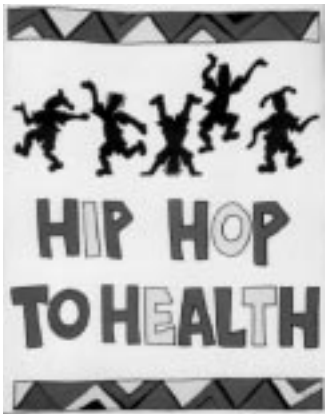
"Everyone working to educate children should realize that we have products to sell," Dr. Wechsler explains. "We have to earn their trust and support. We've got to look at the kids as consumers who make decisions based on what's important to them. We have to look at what matters to them and not just preach to them to do the right thing."

Relatively few helping hands were required for the Low-Fat Milk Education Project. For each school, the project needed a few days of work by the person who played Low-Fat Lucy, cooperation from school officials and staff members, and volunteer support for auditorium sessions and taste tests. Project activities required only minimal assistance from teachers and did not interfere with classroom time or with the normal workings of the school cafeteria.

For more information about the Low-Fat Milk Education Project, contact Ms. Maria Sabeta, Project Manager, Washington Heights-Inwood Healthy Heart Program, 359 Fort Washington Avenue, New York, NY 10033; telephone 212-923-4299. For more information about the evaluation component, contact Dr. Howell Wechsler, Health Education Research Scientist, Division of Adolescent and School Health, Centers for Disease Control and Prevention, 4770 Buford Highway, Mailstop K-33, Atlanta, GA 30341-3724; telephone 770-488-5559.



BOYS AND GIRLS IN THE 'HOOD HIP HOP TO HEALTH



A Northwestern University health promotion project designed specifically to appeal to the interests, customs, music, and attitudes of inner-city African American children is proving successful in winning the youngsters' attention—and commitment—to heart health.

The children named the culturally specific project Hip Hop to Health, reflecting their interest in the inner-city-bred phenomenon of hip hop music.

Relying on heavy rhythms and bass runs, hip hop music is combined with rhyming schemes and rap lyrics laden with street slang and ethnic symbolism. The music is a cultural emblem that quickly grabs the attention of inner-city African American kids.

Beyond the initial draw of hip hop and dancing, the project is specifically designed to appeal to African American children by involving their parents, friends, playmates, and community leaders and role models, including neighborhood teenagers.

Research has shown that behaviors that increase the risk of cardiovascular disease—such as smoking and diets high in total fat and saturated fat—are often developed during childhood and adolescence. Historically, nutrition education campaigns have not targeted disadvantaged minority youth, leaving these children highly vulnerable to high-risk behaviors for cardiovascular disease resulting from the challenge of coping with poverty.

Hip Hop to Health is designed to reach that high-risk group. The program provides an entertaining way for African American children in second through fifth grades in Chicago's inner city to learn healthful habits early on, thus helping them avoid heart disease as adults.

Hip Hop to Health is testing the effectiveness of two interventions to improve high-risk eating habits and to encourage physical activity. These are:

- Know Your Body (KYB), a comprehensive health education curriculum endorsed by the U.S. Department of Education that uses a standardized format to reduce chronic risks of disease; and
- Intensive Know Your Body (IKYB), which augments the KYB curriculum with culturally specific elements. IKYB consists of the standardized KYB curriculum plus active participation by parents, peers, neighborhood leaders, and teenage mentors.

Some 250 African American parent-child pairs are randomly assigned to either the core KYB program or the culturally enhanced IKYB version.

"There is better attendance in the intensive sections, and the kids in the intensive groups seem to get more out of the instruction," says project director Dr. Marian L. Fitzgibbon of Northwestern University Medical School. Detailed comparative results are being tabulated.

The culturally specific design features trained interventionists who are African Americans and includes regular visits from neighborhood leaders and role models—politicians, teachers, lawyers, and ministers. It uses Black History Month, honors the country's African American heritage, and recognizes ethnic traditions and tastes in music, dancing, food, clothing, and sports.

"In the intensive groups, we discuss ethnic foods like greens," explains Dr. Fitzgibbon. "We talk about how to prepare fried chicken using less breading and less oil."

The interventionists conduct weekly evening sessions for five to eight children, who are required to bring a parent or guardian to half of the sessions. The interventionists are inner-city schoolteachers who are skilled in dealing with groups of active youngsters.

The key to teaching healthy habits is winning and holding the children's attention, according to Dr. Fitzgibbon. "Then the curriculum is not hard to teach," she says.

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BOYS AND GIRLS IN THE 'HOOD HIP HOP TO HEALTH

(continued from page 13)

"The content of the curriculum is easier to teach when the interventionists have skills in child development, setting limits, and nurturing children. If the instructors have that, we can teach them the content of the curriculum."

The project sets strict rules for promptness and responsiveness for the children as well as interventionists and peer leaders, since they serve as important role models for the children.

Junior high and high school students (ages 13 to 16) from the neighborhood serve as teacher assistants or mentors and role models for the children, all of whom come from families that are receiving public assistance.

Children and parents in the KYB core program sometimes become curious or envious of the increased attention given to their friends in the intensive, culturally specific groups. To keep conflict to a minimum, KYB and IKYB sessions are held on different days, says Dr. Fitzgibbon.

Such flexibility and adaptability are important, enabling the project to respond

IT STARTED WITH KNOW YOUR BODY

Hip Hop to Health and many other successful school-based health education programs can trace their roots to Know Your Body, a pioneering health education and health promotion program created in the 1970s by the American Health Foundation, a private nonprofit organization based in New York City.

Today, KYB is still going strong. KYB targets children in kindergarten through the seventh grade, teaching them how to take responsibility for their own health. Support for KYB has come from the NHLBI, the National Cancer Institute, and several private foundations and corporations.

The KYB program contains five components: a health education curriculum, teacher training, biomedical screening, extracurricular activities, and program evaluation.

According to the American Health Foundation, the health education curriculum and teacher training constitute the core components of KYB—the other three components are referred to as enhancements.

KYB's health education curriculum uses games, simulations, and other interactive methods to teach children how to develop healthful habits and increase their health knowledge. Included in the curriculum are units on smoking, nutrition, exercise, and disease prevention.

Teacher training, the second core component of KYB, recognizes the significant influence that teachers have in motivating their students to learn about health and to adopt healthful behaviors—a fact confirmed by several rigorous evaluations of the KYB program.

Many KYB activities relate health education to other elementary school subjects such as language arts, math, science, and social studies.

"Health education should be just as important as reading, writing, and arithmetic," says KYB project director Dr. Mario Orlandi.

"I don't think we give health education enough importance in the schools. But when you think about it, health education is a subject that could actually save your child's life."

Although the foundation recommends implementing the full KYB program, schools across the country have successfully used various combinations of the five components. KYB received the endorsement of the U.S. Department of Education in 1989.

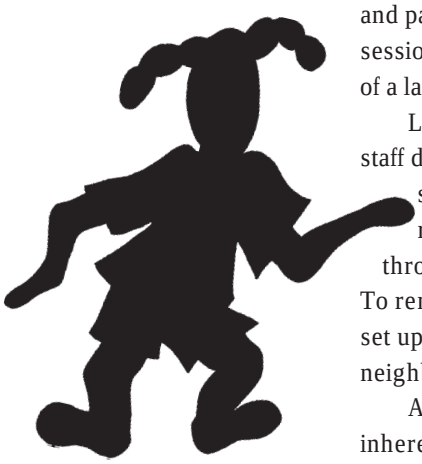
School-based KYB activities have included blood pressure and cholesterol screenings for students and teachers, student aerobics classes, salad bars and heart-healthy entrees in school cafeterias, food-tasting parties, and poster and essay contests.

KYB stresses the importance of health education as a long-term commitment. "You can't expect a 6-month or 1-year program to have an impact on the rest of the child's life," says Dr. Christine Williams, who began the program in 1975. She is now the director of both the American Health Foundation's Child Health Center and the preschool Healthy Start health education program.

"The dose really does make a difference," she adds. "You have to try to begin a program in preschool or early elementary school and build on it throughout the school career."

Studies have shown that students participating in KYB increased their health knowledge, carbohydrate intake, and HDL cholesterol levels. Participating students also decreased their blood pressure, fat intake, and total cholesterol, and they were less likely than their nonparticipating peers to start smoking.

The American Health Foundation offers help, guidance, and materials to schools that are interested in launching their own Know Your Body program. For more information, contact Dr. Mario Orlandi, Chief, Division of Health Promotion, American Health Foundation, 1 Dana Road, Valhalla, NY 10595; telephone 212-551-2502; fax 212-697-4374.



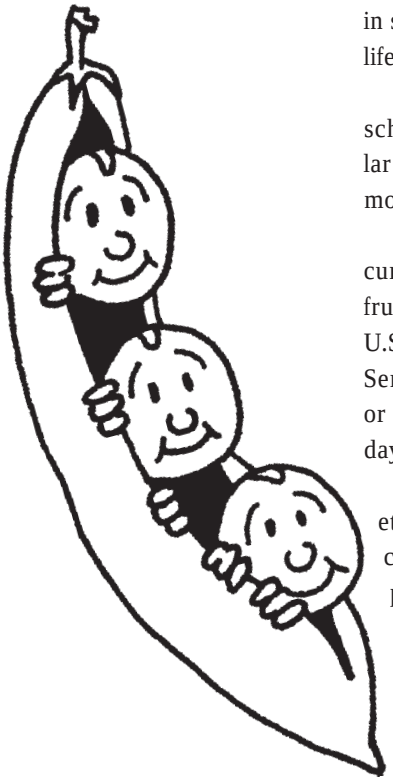
to community needs. For example, attendance was high during Hip Hop's first year, and participants said they enjoyed the sessions, which were conducted on one side of a large public housing development.

Later, however, attendance fell off. The staff discovered that a truce between local street gangs had broken down, making it risky for project participants to walk through certain areas to attend the sessions. To remedy this problem, Hip Hop to Health set up matching projects on two sides of the neighborhood.

Another aspect of this adaptability is inherent in the project's design. Hip Hop to Health first seeks to respond to the children's unique needs and interests and then teaches them how to reduce fat in their diet and increase their nutrition knowledge, physical activity levels, and parental support for healthy eating. Meeting these goals should help the children gain confidence and self-respect and understand the importance of caring for their bodies, say the researchers.

For more information, contact Dr. Marian L. Fitzgibbon, Assistant Professor of Psychiatry and Preventive Medicine, Northwestern University Medical School, 303 East Ohio, Suite 550, Chicago, IL 60611; telephone 312-908-4257; fax 312-908-5010.

GEORGIA PROGRAM TEACHES STUDENTS AND TEACHERS TO EAT HEART HEALTHY



Fourth and fifth graders in Georgia learned more in school last year than just reading, math, science, and social studies. They learned to eat—and like—fruits and vegetables.

Teach Well was an NHLBI-funded project that, with a companion program called Gimme 5, taught teachers and students alike in suburban Atlanta to adopt heart-healthy lifestyles.

Teach Well encouraged elementary school teachers to improve their cardiovascular health and to serve as classroom role models for good health and nutrition.

Gimme 5 was a nutrition education curriculum to teach students to enjoy eating fruits and vegetables. It was based on the U.S. Department of Health and Human Services goal of getting Americans to eat five or more servings of fruits and vegetables a day.

As any parent knows, fruits and vegetables usually are not high on most children's list of favorite foods. Yet food preferences and eating habits that begin in childhood can influence—for better or worse—the chances of developing heart disease.

Teach Well and Gimme 5 studied the promotion of healthful eating habits among children in 32 elementary schools in DeKalb County, Georgia.

Teach Well was designed to improve school health education by increasing the health knowledge and skills of selected DeKalb County elementary school teachers and then motivating them to adopt healthful behaviors and promote them to their students.

This wellness program for teachers consisted of weekly 30-minute sessions conducted in the participating schools by Teach Well counselors. Teachers earned incentive points for taking part in other wellness activities such as aerobics classes. They then exchanged the earned points for Teach Well T-shirts, tote bags, and classroom supplies.

The teachers used the Gimme 5 curriculum to present fruits and vegetables favorably in the classroom. Dr. Tom Baranowski of the University of Texas M.D. Anderson Cancer Center led the team that developed Teach Well and Gimme 5. He says that taste in food is largely a learned trait, acquired early in

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GEORGIA PROGRAM TEACHES STUDENTS AND TEACHERS TO EAT HEART HEALTHY

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childhood. People learn to enjoy a certain type of food following repeated exposure to it as a pleasurable sensation experienced in a favorable context—at the family dinner table, for example.

Gimme 5 emphasized the enjoyment and fun involved in preparing and eating these healthful food choices. It also encouraged children to ask for fruits and vegetables at home and to seek them out even in fast-food eateries.

The Gimme 5 curriculum consisted of 24 fun-filled 45-minute classroom sessions—12 for the fourth grade and 12 for the fifth grade. The kids recited rap lyrics, learned about and shared views on different foods, and actually prepared and tasted fruit and vegetable dishes that are fast, simple, and flavorful. School cafeterias provided the fruit and vegetable servings for the taste testings.

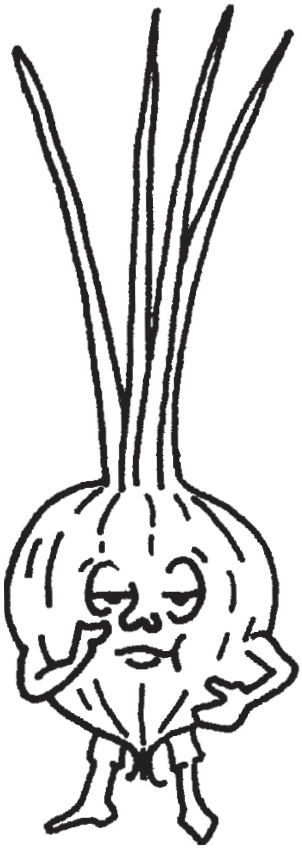
"Exposure is a primary determinant in whether kids like a food or not," says Dr. Baranowski. "The classroom taste testing increased the exposure of kids to fruits and vegetables. When kids think of fruits and vegetables, they don't usually think of fun kinds of activities. We tried to make the curriculum enjoyable, and we hoped that the kids would associate fun activities with fruits and vegetables."

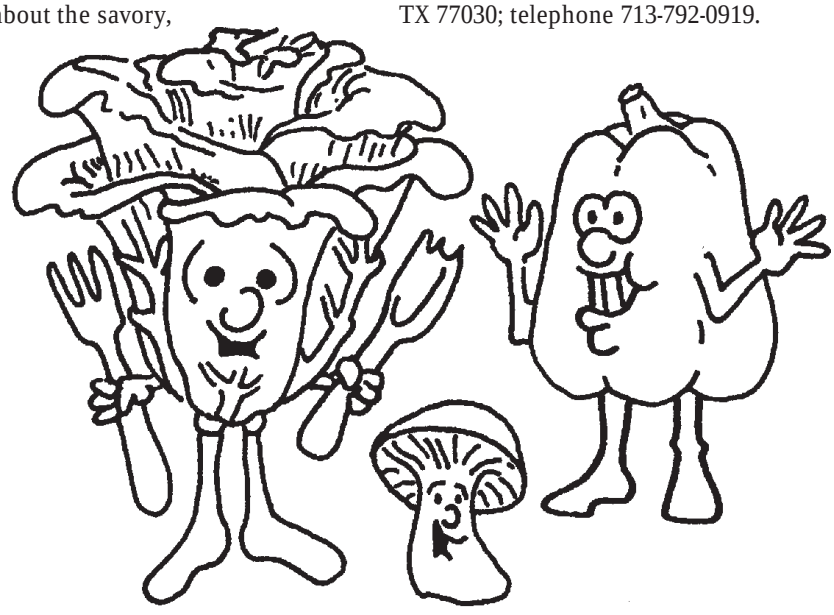
These activities included classroom discussions about the savory, entertaining, and even amusing features of fruits and vegetables; the anticipation related to preparing tasty foods; ways to enhance flavors; watching other people enjoy eating fruits and vegetables; and hearing teachers describe how they appreciate these foods. Kids also enjoyed the recognition they received on achieving their goal of eating five servings of fruits and vegetables a day.

Through classroom role-playing and guidance, children were encouraged to go home and ask for fruits and vegetables to eat. They were urged to ask parents to put these foods on the family grocery list and to help shop for them. The kids also learned that when the family plans to visit a fast-food outlet, they can ask their parents to take them to one that offers salads, fruits, and vegetables and then select favorite vegetable and fruit items from the fast-food menu.

Parents were involved, too. They received a weekly newsletter and three videos, all providing information about the Gimme 5 classroom activities and offering hints and menus to increase their children's consumption of fruits and vegetables.

For more information about Teach Well and Gimme 5, contact Dr. Tom Baranowski, Professor, Department of Behavioral Science, University of Texas M.D. Anderson Cancer Center, 1515 Holcomb Boulevard, Houston, TX 77030; telephone 713-792-0919.





HOME-STUDY PROGRAM EARNS HIGH MARKS

How do you teach heart-healthy eating habits to children with high cholesterol?

Doctors have relied mostly on referrals to a registered dietitian or in-office counseling to educate these young patients and their families. However, dietitians with pediatric experience are scarce, educational materials for children are limited, and medical insurance often does not pay for dietary counseling.

The Parent-Child Autotutorial (PCAT) program now offers physicians, especially pediatricians, another alternative. PCAT is a take-home education program developed by Pennsylvania State University, in cooperation with the Children's Hospital of Philadelphia.

This NHLBI-funded program teaches children and parents alike how to make dietary changes that will lower kids' cholesterol levels. The prescribing physician monitors the child's progress.

PCAT features a talking storybook (a book with audiotapes) for children ages 4 to 10 and an accompanying easy-to-use guide for parents. The storybook contains 10 lessons and activities (such as crossword puzzles) that reinforce the lessons. Characters in the storybook, such as Jerome the Gnome, talk to kids about how to choose healthy foods in different situations—for example, when they go out for fast food or go on a picnic. The guide for parents contains basic information on cholesterol and diet and provides recipes and tips for encouraging children to eat healthier foods.

In a pilot study of PCAT's effectiveness, titled the Children's Health Project, the program performed very well. The pilot was conducted with the cooperation of nine pediatric practices in the Philadelphia suburbs that referred healthy children with elevated levels of LDL cholesterol to the study.

The children and their parents were randomly assigned to one of three groups: a PCAT group; a group that received a 45- to 60-minute counseling session with a dietitian and parent/child print materials; and a control group of children with elevated cholesterol who received no intervention. There also was a control group of children with normal cholesterol levels.

After 3 months, the groups were tested for changes in nutrition knowledge, LDL cholesterol levels, and intake of dietary fat. They were tested again after 6 months and 12 months to see if the changes held over time.

The 3-month followup showed that the PCAT children scored a threefold higher increase in nutrition knowledge than those in either the counseling group or the at-risk control group. The PCAT group also had

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MAKING IN-OFFICE CHOLESTEROL TESTS FAST AND ACCURATE

Cholesterol screening would be faster and more convenient if the blood sample could be analyzed in a private medical office or clinic. But the quality and accuracy of these measurements have been questioned.

The Children's Health Project, an NHLBI-funded project headed by Dr. Barbara Shannon of Pennsylvania State University, has developed an easy-to-use quality assurance (QA) procedure to produce reliable in-office tests. The procedure judges the quality and accuracy of these measurements based on standards established by the National Cholesterol Education Program.

The procedure was tested in nine pediatric offices involved in the PCAT pilot study. The office staff members who participated had limited or no laboratory expertise and no experience with a QA program. The instrument used was a benchtop analyzer (the Kodak Ektachem DT-60).

Essentially, office staff members were taught to perform two QA procedures with each batch of patient samples. The QA materials were analyzed and plotted on charts that were sent to a lipid research center for evaluation. Abnormal data were reported to the center by telephone, and any appropriate action was taken—for example, the instrument might be recalibrated or the QA material replaced.

An external QA program also sent an "unknown" sample to each practice at three monthly intervals. The sample was analyzed with the next batch of patient samples and the results reported to the research center.

In a separate study, 20 samples were measured on a single instrument. The same samples were then tested in the clinical chemistry laboratory at Children's Hospital of Philadelphia using automated analysis. The results showed a good correlation between the benchtop analyzer procedure and the laboratory method.

Thus, appropriate levels of accuracy can be achieved in a physician's office when a suitable quality assurance program is used.

For more information on this study, please contact Dr. Shannon at Pennsylvania State University.

HOME-STUDY PROGRAM EARNS HIGH MARKS

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significant reductions in LDL cholesterol levels in contrast with the at-risk control group. The counseling group had a less significant drop in LDL cholesterol levels.

Three-day food records taken at the beginning of the program and again at 3 months showed drops in total fat and saturated fat intakes among the PCAT and counseled groups. Children in the control groups, by contrast, had increased their intakes.

Project investigator Dr. Barbara Shannon of Pennsylvania State University says staff members were not surprised. "We believed the home study program would work because most kids like to learn and like to make decisions for themselves."

Unfortunately, children are less enthusiastic about having their blood drawn, and periodic blood tests are necessary to measure cholesterol changes. Faced with a potentially high dropout rate, the project staff took creative steps to overcome this barrier, notes Dr. Andrew Tershakovec, a PCAT researcher and attending physician at Children's Hospital. They teamed the blood tests with a tasty heart-healthy breakfast and a visit to the study center's toy drawer. Both ploys turned the clinic visits into positive experiences.

The project's next goal is to adapt the PCAT materials for low-literacy groups in the inner city.

For more information, contact Dr. Barbara Shannon, Dean, College of Health and Human Development, Pennsylvania State University, 201 Henderson, University Park, PA 16802; telephone 814-865-3091 or 814-865-1420; fax 814-865-3282. Or contact Dr. Andrew Tershakovec, Attending Physician, Division of Gastroenterology and Nutrition, Children's Hospital of Philadelphia, 34th Street and Civic Center Boulevard, Philadelphia, PA 19104; telephone 215-590-2466; fax 215-590-3606.

NHLBI LAUNCHES INITIATIVE TO PROMOTE CHILDREN'S HEART HEALTH

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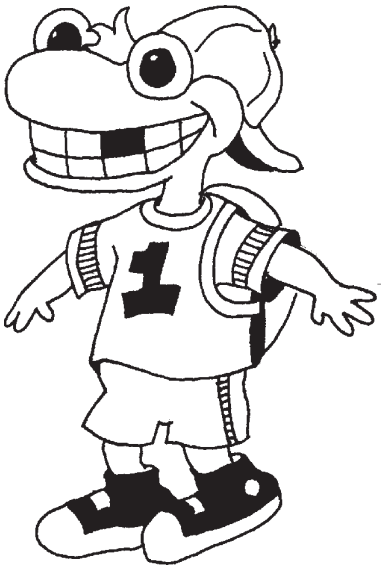

- Evaluations should be done with easy-to-use, consistent tools.

The discussion also brought out some of the barriers faced by health educators, including the following:

- Inner cities are frequently unsafe and lack places where children can play and increase their physical activity.
- Innovative approaches are needed for children who lack literacy skills.
- Most doctors and parents do not know how much physical activity children need and usually overestimate how much they get.
- The public is often confused about what constitutes good nutrition.
- Schools may experience a high turnover rate among staff, which makes it hard to train teachers to be health promotion instructors.
- Schools are burdened by many topics competing for curricula time, and the topics of drugs and violence typically take precedence over cardiovascular health.

Between workshop sessions, participants displayed project materials, which included a computer program, videotapes, workbooks, booklets, and other printed items.

Since the workshop, the CHPP team has been using the insights gained to plan the initiative's future.

"Children learn many lifestyle lessons before they become adults," Ms. Donato says. "Too often those lessons are unhealthy—and hard to change or live with. As health educators, we can help them do better. We can teach children and their families that healthy behaviors are fun and easy to learn. We can give children and their parents the skills they need to keep their hearts strong."

KIDS SAFELY SAY "NO THANKS" TO FATTY FOODS

A low-fat diet can help adults lower their blood cholesterol level, but can dietary changes safely help children?

"If taken to extremes, dietary interventions in children could create problems," says Dr. Linda Van Horn, registered dietitian, professor of preventive medicine at Northwestern University, and principal investigator for the Dietary Intervention Study in Children (DISC). "But with an accompanying program that includes effective nutrition education, the diet is safe, and it works."

The DISC program, a 3-year study funded by the NHLBI, was the first to demonstrate that a diet low in fat can safely decrease LDL cholesterol in growing children with high LDL cholesterol levels. It also is the first dietary intervention study to include long-term followup.

The DISC program involved 663 healthy children ages 8 to 10 who had elevated LDL cholesterol when the study began. These children were randomly assigned to a usual care (control) group or to an intervention (experimental) group.

Children in the usual care group were told that their LDL cholesterol was high, were referred to usual medical treatment, and were provided with standard nutritional information. Children assigned to the intervention group received a personalized program that included more than 20 group and individual sessions to teach them and their families how to choose a diet that meets the nutritional needs of a growing child yet contains only about 28 percent total fat.

Working with children presents a challenge, according to Dr. Van Horn. "Although 8- to 10-year-olds love to learn—they soak up information like sponges—they're still children. They resent being bored or dictated to."

The DISC team found that children respond best when information is provided in a way that lets them have fun and gets them actively involved in the learning process. For example, project researchers created a tool called the DISC Dictionary that helps children quickly determine if a food has a high or low fat content. The dictionary ranks foods according to saturated fat and total fat, assigns them a number from 1 to 5, and then classifies them as either "go" foods or "whoa" foods. The kids learned to use the food scores to regulate their fat intake, eating "go" foods most often and limiting the number of "whoa" foods selected. The DISC team also used realistic models of foods to help the kids learn to recognize portion sizes.

The DISC Dictionary was particularly helpful when the project began because food labels did not list saturated fat content at that time. Since then, the food labeling requirements of the Food and Drug Administra-

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KIDS SAFELY SAY "NO THANKS" TO FATTY FOODS

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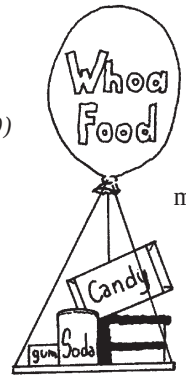

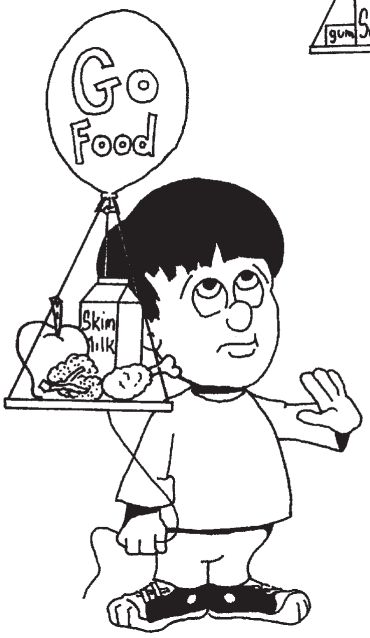

tion have made fat content easier to compute, but Dr. Van Horn believes that a simple, fun approach is still preferable. "It is unrealistic to expect kids to refer to a label and then to do math."

Another innovation, a game called No Thanks, gives children a chance to think ahead of time about how they would react in certain situations. A player selects a card that sets a scenario—for example, a birthday party that is held at a pizza parlor—and then is asked to share what he or she could do in that situation to eat as healthfully as possible.

About halfway through the study, focus groups were held to examine the kids' feelings about the program—especially what they considered its biggest drawbacks. Surprisingly, the intervention kids did not report feeling stigmatized by being on a "special" diet. The major problem, kids said, was finding low-fat foods at social events, such as parties.

After 3 years, dietary total fat, saturated fat, and cholesterol levels had decreased significantly in the intervention group compared with the usual care group. Adjusted mean height was comparable in both groups, and there were no significant differences in serum ferritin, serum albumin, and other measures that indicate adequate nutritional intake. Psychological assessment showed essentially no differences between the groups, except that the intervention group had a lower depression score—perhaps because the program provided extra social support.

The followup study, the DISC II program, will continue to follow these children to age 18.

For more information, contact Dr. Linda Van Horn, Professor of Preventive Medicine, Department of Preventive Medicine, Northwestern University Medical School, 680 North Lake Shore Drive, Suite 1102, Chicago, IL 60611-4402; telephone 312-908-8938; fax 312-908-9588.

SPARK IGNITES ELEMENTARY SCHOOL PHYSICAL EDUCATION

(continued from page 8)

marked increases in activity and improvements in fitness. Results show that student activity in physical education classes increased by as much as 70 percent, compared with activity among control groups with untrained teachers.

This increased activity led, in turn, to improved sports skills and higher fitness levels. Students improved their mile-run times and showed increases in muscularity. Equally important, the children liked the SPARK version of physical education. When surveyed about the program, they ranked all SPARK activities between good and excellent.

The study's positive results and SPARK's popularity among students, teachers, and administrators prompted the investigators to begin a broad dissemination of SPARK. This is being done as a nonprofit effort through San Diego State University. The program even has a home page on the World Wide Web at http://www.foundation.sdsu.edu/projects/spark/index.html. The Web site offers journal citations and purchase information on curricula. The goal is to share the SPARK program with elementary schools nationwide.

For more information, contact Mr. Paul Rosengard, Director of Educational Services, SPARK Physical Education, San Diego State University, 6363 Alvarado Court, Suite 250, San Diego, CA 92120; telephone 800-SPARK-PE; fax 619-594-8707; e-mail sparkpe@mail.sdsu.edu.

STUDENTS CHARGE AHEAD WITH FOOD ON THE RUN

Students at inner-city Hoover High School in San Diego have been empowered to improve their own nutrition and fitness, thanks to a Food on the Run campaign spearheaded by California Project LEAN (Low-Fat Eating for America Now).

This student-driven campaign encompasses elements as diverse as peer counseling, hip hop dance classes, public service announcements (PSAs), nutrition lessons, and low-fat menu offerings. The campaign has engaged an equally diverse range of supporters. In addition to students, participants have included parents, teachers, the school's administration and food service operation, fast-food outlets, and the media.

This multipronged design owes much to two earlier NHLBI-funded projects—the Family Health Project and the Child and Adolescent Trial for Cardiovascular Health (CATCH).

"We have definitely applied many of their principles," says Food on the Run coordinator Joan Rupp, who worked with both earlier projects. From the Family Health Project, an elementary school program in San Diego County, "we learned the importance of working with the community for support," she notes. From the San Diego CATCH (part of a larger 4-city, 96-school CATCH project), "we learned the importance of getting participation from everyone in the student's environment—parents, teachers, the school administration, the food service staff, and the community."

The campaign also draws on another existing program—Hoover's Student Wellness Advocacy Program, or SWAP. SWAP students serve as peer counselors on health concerns such as teenage pregnancy and drugs. SWAP provides a framework that Food on the Run coordinators can use to involve students in advocating good nutrition and physical activity.

"Kids are responsive to the program because they look up to the SWAP kids, and it's the SWAP kids who are providing a lot of the information," says Ms. Rupp.

Another student success has been a lobbying effort to get more physical activity in school. For example, hip hop dance classes are being offered for the first time this school year.

One of the campaign's most exciting activities was the production of a television PSA aimed at youth-oriented media. About 60 students worked on the PSA, which was filmed at Hoover and aired on local cable television. The coordinators provided the students with a simple jingle that the students adapted to rap music. The message is straightforward—become more active, eat less fat.

"I think the commercial was really exciting for them. And now that we've established a fun reputation, the kids are willing to listen to our messages. They know that Project LEAN is committed to them," Ms. Rupp says.

Two nutrition lessons have been developed—one on fast foods and one on fat in foods. Both lessons are integrated into several areas of the curriculum, including math, biology, home economics, and English as a second language.

In addition, the cafeteria offers High on Health reduced-fat menu options. The school district is so happy with High on Health that this school year the menus are being offered in all 20 of the district's schools.

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CALIFORNIA

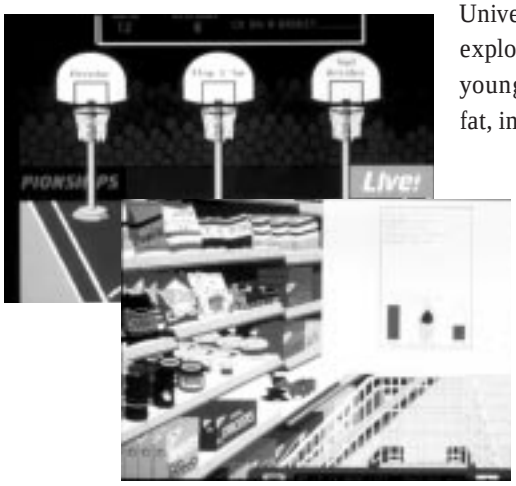
PROJECTLEAN

LOW-FAT EATING FOR AMERICA NOW

SAN JOSE TEENAGERS TAKE HEART FROM A COMPUTER

Computers are rapidly becoming the textbooks of the 1990s, helping to teach students everything from art to zoology. In San Jose, California, an interactive computer curriculum is also helping ninth graders improve their cardiovascular health and fitness.

A project led by Dr. Thomas N. Robinson and Dr. Joel D. Killen, both of Stanford University School of Medicine, is exploring how computers can help young people lower their intake of fat, increase their intake of fiber, increase their physical activity, and stop smoking—or, better yet, not start. The project is formally known as Computer-Assisted Cardiovascular Disease Risk Reduction for Adolescents—but teenagers call the curriculum LIVE!



Computer simulation screens

Now in its third year, the health education project is funded by a grant from the NHLBI, with additional support provided by the American Heart Association. Dr. Robinson and Dr. Killen lead the Youth Studies research group at the Stanford Center for Research in Disease Prevention. The project evolved from the success of an earlier study called the Stanford Adolescent Heart Health Program, also funded by the NHLBI.

Results of the Stanford Adolescent Heart Health Program showed that theoretically sound school-based interventions can motivate teenagers to modify several important risk factors for cardiovascular disease and could even lead to changes in body fatness and fitness levels. However, the earlier study also suggested that a lack of knowledge among teachers about cardiovascular disease prevention and a corresponding need for teacher training could pose problems for widely implementing school-based risk reduction programs.

To address these potential problems, Dr. Robinson and Dr. Killen replaced some of the classroom teaching with an interactive computer program. A computer now introduces students in groups of two or three at a time to the cardiovascular risk reduction curriculum. As a result, classroom teachers do not need to become experts in such topics as nutrition, smoking cessation, exercise, and cardiovascular physiology.

Over 2 years, 10 public high schools in San Jose volunteered to participate in the project. Six of the schools use the risk reduction curriculum in their health or physical education classes; the other four schools serve as controls.

The first of the curriculum's two instructional phases consists of eight 45-minute computer-based sessions. The interactive multimedia computer lessons rely heavily on simulations to help students learn and practice heart-healthy skills. A heart-shaped cartoon character named Heartly guides the students through the computer lessons.

For example, Heartly takes the students on a trip to the grocery store to search for low-fat foods or engages them in a version of the Smokers' Dating Game to demonstrate the immediate negative effects that smoking can have on their social life. In other sessions, students try to order a healthful meal in burger and pizza fast-food restaurants, turn a "couch potato" back into a teenager by making physically active choices, and counterargue with cigarette ads.

In the second instructional phase of the curriculum, students use what they learned from the computer to develop new and creative ways to achieve a heart-healthy lifestyle. The students convene in larger groups to create rap lyrics, skits, or posters designed to persuade their peers to change high-risk behaviors and improve their heart health. Each group's presentation is videotaped and voted on by their peers for persuasiveness.

"One reason we've gone to multimedia is to create the simulations," says Dr. Robinson. "It was an attempt to more faithfully apply our theoretical model for health behavior change in

a classroom setting, while lightening some of the burdens on teachers. Computer simulations let kids lead themselves. We believe the computer-based approach has greater potential for generalization to schools throughout the Nation, with increased fidelity of delivery."

In addition to learning about exercise, smoking, and physical activity on the computer, the students are encouraged to spend 3 days a week engaging in aerobic activities during physical education classes to improve their heart health. They learn how to monitor their heart rate to see whether they are exercising at a level sufficient to improve their cardiovascular fitness.

By using computers, students receive self-directed instruction. But, according to Dr. Robinson, the technology associated with the project initially frightened teachers. "Once they got going, however, the teachers loved it. They were surprised at how much they like the computer, how easy it is to use, and how much the kids like it."

Dr. Robinson says the response from the students has been equally positive. A second group of ninth graders recently completed the curriculum.

Participating students are followed through the 10th grade to see whether and to what extent the beneficial effects of the project last beyond the immediate instruction period. Preliminary results show that students who participate in the program increase their knowledge of risk factors, increase their physical activity levels, decrease their dietary fat intake, and decrease their smoking behavior.

Dr. Robinson believes the LIVE! curriculum could benefit students from middle school through high school. LIVE! curriculum materials are available on CD-ROM for Macintosh computers. Call MBNA, Inc., at 206-827-2771.

For general information about the interactive computer project, contact Dr. Thomas Robinson, Assistant Professor, Department of Pediatrics, Stanford Center for Research in Disease Prevention, Stanford University School of Medicine, 1000 Welch Road, Palo Alto, CA 94302-1885; telephone 415-723-5331; fax 415-725-6906.

STUDENTS CHARGE AHEAD WITH FOOD ON THE RUN

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The Food on the Run campaign extends beyond Hoover's cafeteria, however, and with good reason: Only about 15 percent of Hoover students participate in the school lunch program; most of the rest eat at nearby fast-food restaurants.

These findings prompted project coordinators to ask local fast-food outlets to add low-fat options to their menus and to promote low-fat items. For example, their work with Taco Bell resulted in the company's promotion of its Border Lite menu at the outlet near the school.

Food on the Run has been so successful that it is currently expanding to 10 California school regions and has 20 schools participating.

The program's success has come from elements beyond just the formal program structure, Ms. Rupp explains. "You need time and patience. It's good to have a student-driven campaign, but sometimes the teens need help with ideas on how to proceed. They may wonder, 'What are you talking about? Where do I even start?' So, it takes special guidance from the adult coordinators."

For more information, contact Ms. Joan Rupp, Department of Exercise and Nutritional Sciences, San Diego State University, San Diego, CA 92182-7251; telephone 619-594-3704.

TEENAGERS STEP TO THE BEAT TO STAMP OUT HIGH BLOOD PRESSURE

Teenagers who develop good exercise habits can significantly reduce their chance of developing high blood pressure as adults. This is especially true for teens who are overweight or who already have higher than normal blood pressure.

A team of investigators from The Johns Hopkins University Health Services Research and Development Center conducted a study to see how a special aerobics program could benefit a group of ninth-grade girls with slightly elevated blood pressure. This study was part of Project Heart, a series of health promotion projects funded by the NHLBI since the early 1980s.

Parents of all girls entering the ninth grade at a public high school in Baltimore were contacted to ask permission to invite the girls to participate in the study. About 90 percent of the parents consented, and about 90 percent of the girls from those families agreed to have their blood pressure, height, and weight checked. They also completed a questionnaire about their health habits.

Girls found to have a high-normal blood pressure (a systolic reading of 130 to 139 mmHg or a diastolic reading of 85 to 89 mmHg) were randomly assigned to the regular physical education class that is required in the ninth grade or to a special enhanced aerobics class created by the project. The aerobics class included activities such as jogging, walking, dance aerobics, step aerobics, and weight training. Sessions on food and nutrition also were provided to help steer the girls away from fad diets that often appeal to this age group.

The project team was pleasantly surprised by the girls' attitude toward the class. "We had the impression from surveys that girls are less likely than boys to get involved in physical exercise," says project investigator Dr. Craig Ewart of The Johns Hopkins University. "But these girls were quite enthusiastic. They especially enjoyed step aerobics—an exercise where you move up and down on a low step to the beat of music."

By the end of the course, the participants in the group that had taken the special aerobics class had reduced their resting blood pressure and heart rate. In addition, their blood pressure and heart rate did not increase as much during a step-exercise test as did those of girls who had taken the standard physical education class.

The girls also seemed to enjoy the class. In an anonymous questionnaire, about 90 percent of the girls assigned to the aerobics class said they would like to take the class for at least one more semester. About a third said they would take it for the remainder of high school, if it were offered.

The girls assigned to the regular physical education class were invited to sign up for the special class the following semester, giving everyone a chance to try the enhanced aerobics. Almost all of the girls elected to take the special class.

Dr. Ewart believes that a school's physical education program can easily implement this type of program. He offers a couple of tips:

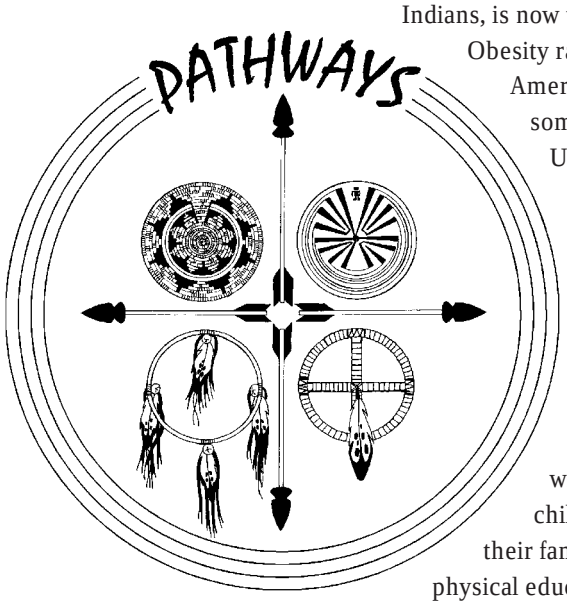
1. Get a good instructor—someone who can motivate the girls to increase their physical activity levels.
2. Help girls who are overweight or who are less fit to feel less self-conscious. One way to do this is to create groups with similar abilities.

For more information, contact Dr. Craig K. Ewart, Professor, Health Psychology, Health Services Research and Development Center, The Johns Hopkins University of Hygiene and Public Health, 624 North Broadway, Baltimore, MD 21205; telephone 410-614-4018; fax 410-955-0470.

AMERICAN INDIAN PROGRAM RECAPTURES PAST TO IMPROVE CHILDREN'S FUTURES

American Indian tradition venerates nature and teaches how to live on the fruits of the land—in harmony and moderation. Now, an NHLBI-funded study called PATHWAYS is trying to prevent childhood obesity by drawing on that tradition to offer Indian youngsters a healthier future.

Heart disease, once rare among American Indians, is now the leading cause of death. Obesity rates are higher among American Indian children in some tribes than in the total U.S. population.



To reverse these trends, PATHWAYS fosters healthy eating practices and increased physical activity. It also encourages understanding of different tribal cultures.

PATHWAYS works with American Indian children in grades 3 through 5, their families, food service staff, physical education and classroom teachers, and other essential staff at their schools. A 3-year feasibility study is now in its final year at six Indian reservation sites. The University of North Carolina provides overall project coordination, and university-based scientists and community representatives collaborate on the activities at each site:

- The University of New Mexico works with the Navajo reservation in New Mexico and Arizona.
- The Johns Hopkins University works with the White Mountain Apache reservation in Arizona.
- The University of Arizona works with the Gila River and Tohono O'odham reservations in Arizona.
- The University of Minnesota works with the Oglala and Sicangu Lakota Sioux reservations in South Dakota.

Together, the PATHWAYS researchers are breaking new ground in developing a curriculum and educational materials.

"We're creating new materials," says Dr. Sally M. Davis, director of the Navajo project in New Mexico. "It's almost impossible to adapt materials that have been developed for other populations. We're working closely with the American Indian communities and their schools.

"The curriculum's motif concerns an American Indian boy and girl who visit the PATHWAYS sites and learn about tribal traditions. For example, they find out about Indian children's games and each tribe's traditional foods," explains Dr. Davis. "A story line conveys the educational, nutritional, and physical activity messages as seen through these two children's visits to the tribes."

Besides its curriculum, the PATHWAYS feasibility program has three other key components, says Dr. C.E. Davis of the University of North Carolina. These are family involvement, physical activity, and school meals.

PATHWAYS' family involvement begins with family fun nights held at each school. The evenings include dancing and competitive physical activities. They also have taste tests so children and their parents can learn that low-fat foods can be zesty and appealing. Each school's food service staff joins in presenting low-fat foods made with fat-drained meat, low-fat cheeses and yogurt, low-fat dips using vegetables instead of chips, and available native spices and foods. Family involvement is maintained throughout the intervention with take-home "snak pacs" and "action pacs." This adds support for behavioral changes.

Grandparents and tribal elders are encouraged to tell the children about traditional games and other physical activities and traditional tribal foods, which include Apache acorn stew, many dishes made with maize (corn), gourds such as pumpkins and squash, wild artichokes and mushrooms, yucca blossoms, prickly pear fruit, and the saguaro fruit. Discussions with families include the

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PROJECT TO HELP AFRICAN AMERICANS LOSE WEIGHT BUILDS ON IMPORTANCE OF CHURCH AND FAMILY

Traditionally, family and church have been powerful forces in the lives of African Americans: They provide stability and fellowship while influencing attitudes and behavior, particularly the drive for self-improvement.

A new health promotion pilot program—the LIGHT Way Project, funded by the NHLBI—is using these traditional forces to help African Americans cope with the stress of modern life, especially the need to adopt healthful habits and lose excess weight.

One LIGHT Way program—the New Start Family Project—is helping members of an African American church in Baltimore, Maryland. New Start holds its family health education sessions in the church.

"We found that families have very little time and are under siege, in a sense, so the educational messages we give them, to be effective, must be not only practical but also given in an accessible forum," says project director Dr. Yvonne L. Bronner of The Johns Hopkins University.

Consequently, the project combines elements of African American spirituality and the family support system to teach ways to decrease the risk of cardiovascular disease, especially through weight reduction and weight management.

"For example," says Dr. Bronner, "we start out by talking about the body as a temple of God, and we build on that to show that one has a responsibility to keep one's body healthy. With this approach—building on existing spiritual values—all of a sudden, all of the other health promotion messages that flow behind are meaningful to the participating families."

The pilot project's study design was based on the principle of *sankofa,* an African term that describes using information from the past to build a better future. This building-on-the-past theme was applied to aspects of modern daily life, reminding participants that spiritual commitment and strong family support have been a key to African American advances throughout American history.

During the 7-week pilot phase of New Start, the families met for weekly evening sessions covering four areas of development—spiritual, mental, physical, and social. Specific topics included body image and self-esteem, time management, fitness assessment, exercise, food labeling, and food preparation.

The sessions opened and closed with families joining in 5 minutes of meditation and prayer. Children and their parents then separated for 50 minutes of review, discussions, and activities that included hands-on approaches to food selection and preparation and fitness practices.

Children and parents received reading assignments covering the U.S. Department of Agriculture's Food Guide Pyramid, cholesterol and fat reduction, smart shopping and cooking, exercise, and related health topics.

Researchers found that some children were hampered by reading problems and concluded from the pilot phase that many health education and promotion efforts should be revised to meet such special needs, with material adapted to meet the audience's background. For example, few of the children were familiar with the food pyramid. Researchers also found that many of these inner-city families—often young couples with small children—did not regularly visit doctors.

Instruction in healthy habits was personalized by having project participants record and examine their diet and lifestyle in light of what they were learning about obesity and health. The families were instructed on how to keep a daily food intake diary and were asked to submit 3-day food consumption records. They also kept similar 3-day records of daily activities in five categories—spiritual, mental, physical, social, and (because they proved to be such popular activities) television viewing or video-game playing.

Instructors used food pyramid analysis charts to compare participants' daily food intake with recommended daily requirements

and to assess the potential impact of the participants' routine daily activities on their mental well-being and physical health.

Family members were then encouraged to set specific goals. Participants were expected to keep a weekly goal-seeking progress chart on their spiritual, mental, physical, and social development. The charts included space for participants to write comments and self-congratulatory notes as a form of reinforcement.

All charts were reviewed weekly by staff members and assessed, in individual consultation with each participant, during the following weekly session. Session leaders also contacted the families weekly by telephone and mail to remind them of their assignment and to provide information on the next session's planned activities.

Researchers particularly wanted to involve fathers and sons in the health promotion effort because such projects often focus more on female family members. The response from male study participants was exceptionally positive.

To learn more about the pilot project, contact Dr. Yvonne L. Bronner, Assistant Professor, Department of Maternal and Child Health, The Johns Hopkins University School of Hygiene and Public Health, 624 North Broadway, Baltimore, MD 21205; telephone 410-955-3481.

AMERICAN INDIAN PROGRAM RECAPTURES PAST TO IMPROVE CHILDREN'S FUTURES

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preparation of wild game such as antelope and deer, many types of freshwater fish, and wild fowl such as ducks and geese.

The physical activity portion of PATHWAYS encourages the schools to increase high-energy activities in physical education classes and recess, with an emphasis on playing traditional Native American games.

The games may be familiar or new ones, learned from the customs of another tribe. They include "toka," a form of field hockey, a well-known native sport of American Indians; "the coyote has smelly feet," an Apache version of tag; "trampling the beaver," an Apache game with the goal of throwing a ball through a rolling hoop; and a Lakota diversion called "tokelecon kin," a form of follow the leader.

PATHWAYS works closely with school food service cooks and administrators to provide nutritional, low-fat cafeteria menus, which emphasize the rinsing and draining of fats from meats, using low-fat ingredients, and encouraging students to drink low-fat milk.

"On most reservations, many children qualify to eat both breakfast and lunch at the school," says Dr. C.E. Davis. "That gives us two opportunities a day to reduce their fat intake."

Following the feasibility study, the PATHWAYS investigators will seek NHLBI funding to extend the program to 40 more American Indian reservation schools, he says.

"The key to PATHWAYS is making it culturally appropriate for this population," says Dr. Sally Davis. "Some very positive elements of the American Indian culture directly relate to exercise and the heart."

For more information regarding the interventions, contact Dr. Sally M. Davis, Director, Center for Health Promotion, American Indian Communities, Department of Pediatrics, University of New Mexico School of Medicine, Surge Building, Room 251, Albuquerque, NM 87131-5311; telephone 505-277-4462; fax 505-277-4857.

For information on the overall study, contact Dr. Benjamin Caballero, Chair of the Steering Committee, The Johns Hopkins University School of Hygiene and Public Health, 615 North Wolfe Street, Room 2041, Baltimore, MD 21205; telephone 410-614-4070; fax 410-955-0196.

HEART*Memo*

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P.O. Box 30105
Bethesda, MD 20824-0105
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Information Center
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